CICOR

The Bridge

A Newsletter from the Cooperative Institute for Climate and Ocean Research

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NOAA Announces Strategic Plan for 2003-2008

New Priorities for the 21st Century

NOAA's Strategic Plan for FY 2003–FY 2008 and Beyond (March 31, 2003) is NOAA's response to the challenge of meeting the needs of America today and addressing the critical issues of tomorrow.

The NOAA Joint Institutes have all been informed of the strategic plan and included in the information exchange. By reviewing the document the JI's can identify the roles their themes play in the mission and priority statements.

The following is taken from the Foreword: NOAA' s Fourth Decade of the document written by Conrad C. Lautenbachaer, Jr., Vice Admiral, U.S. Navy (Ret.) listing the Mission Goals.

The four mission goals are:

1. Protect, restore and manage the use of coastal and ocean resources through ecosystem-based management
2. Understand climate variability and change to enhance society's ability to plan and respond
3. Serve society's needs for weather and water information
4. Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation

This document can be accessed from the NOAA Office of Strategic Planning webpage http://osp.noaa.gov.

Bob Weller New JI Lead Director

The Joint Institute's Directors take turns serving as lead JI Director for a one year term. The order of succession is determined by the dates of establishment of the Joint Institutes and by the desire to alternate between a director from a JI with an ocean theme and a director with an atmospheric theme. The lead JI Director represents the Joint Institutes within NOAA and the NOAA Office of Oceanographic and Atmospheric Research (OAR), including the quarterly meetings of OAR's Senior Research Council. The Senior Research Council is composed of OAR leadership and includes the Directors of the NOAA OAR Research Laboratories. The lead JI Director works closely with OAR personnel to raise NOAA awareness of the JIs, to represent JI issues, to coordinate outreach activities by the JIs with those of NOAA OAR, and to see that the JIs participate in strategic and budgetary planning.

Bob Weller, CICOR's Director, became lead JI Director on July 1, 2003. He met at OAR in Silver Spring, MD with the new OAR liaison for the Joint Institues, John Cortinas, and with Maryanne Whitcomb, who is head of NOAA OUTREACH.

Bob attended a NOAA Senior Research Council (SRC) meeting in July. NOAA strategic planning processes are undergoing major revision with the introduction of a new set of matrix management teams (addressing the strategic goals of ecosystems, climate, weather and water, commerce and transportation, and programs to support all goals), and the main topic of the meeting was planning for FY06 and beyond. In the planning process it is important that the JI's work with the new team leaders and that JI principal investigators work with NOAA Program Managers working under the new management teams. To facilitate this, Bob has begun

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Changing of the Guard

Thank you to Marilyn Moll for helping CICOR to spin up as NOAA's 11th Joint Institute, before she moved on to help NOAA NESDIS and USWRP establish a new Cooperative Institute. Good Luck, Marilyn!!

Marilyn I. Moll has served in a number of positions for the federal government over the past 37 years, beginning her civilian career with the Department of Defense in the Pentagon where her duties focused on the Navy's aircraft operation statistics. She transferred to the Navy's Public Affairs Office in Honolulu, Hawaii.She currently is an employee with the Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA). She brings years of grants and cooperative agreements experience to her present position and has been highly successful in helping to build NOAA's multi-million dollar Joint Institute (JI) Program. The Institutes operate under cooperative agreement awards between NOAA, universities and non-profit research institutions across the United States. These Institutes have partnered with NOAA to develop centers of excellence in research.

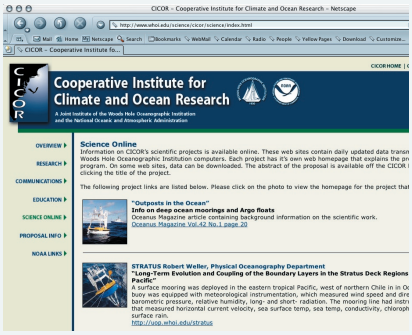
JI Administrators have described her as "a unique combination of character, knowledge, personality, integrity and passion that is necessary to communicate at all levels. Although she supports our JI programs extremely well, she never lost sight of her responsibilities and loyalty to NOAA."

Since the JI personnel have always been a close group, with Marilyn (and Linda McLaughlin) in the forefront, we would like to say a little about Marilyn the person, not just the administrator. Did you know that Marilyn is both a downhill and cross-country skier? That she runs, and placed 10th in her age group last May in the Bolder-Bolder 10K race? That she and her husband do a 5-day

Marilyn Moll article continued on page 3

CICOR Science Online

Many of the projects funded by NOAA through CICOR have their own web-pages that include an overview of the project, with maps, dates, personnel and data plots. Near-real time data can be accessed on some of these webpages.



www.whoi.edu/science/cicor/science

CICOR's contributions to the NOAA webpage

NOAA OAR Homepage – "in the Spotlight….."

"Where the trade winds meet: air-sea coupling in the inter-tropical convergence zone"
J. Tom Farrar, WHOI/MIT Joint Program Student and
Robert Weller, Senior Scientist, WHOI/CICOR
http://www.oar.noaa.gov/spotlite/archive/spot_pacs.html

"Boundary Layer Studies in the Stratus Deck Regions of the Eastern Pacific"
Robert Weller, Senior Scientist, CICOR Director
http://www.oar.noaa.gov/spotlite/archive/spot_stratus.html

NOAA Internal Web Page – "Hot Items"

"Report on ECOHAB/GLOBEC Workshop"—Donald Anderson, BIO, April, 2003

"Great Success and High Expectations – Submarine Ring of Fire"
Dana Yoerger, AOPE November 12, 2002

"Observing the Ocean's Past and Present"—Andrey Proshutinsky, PO, December 21, 2001

NOAA Progress Report: Analysis of the 1999 Georges Bank Tidal Mixing Front Moored Array Data

PIs: Robert C. Beardsley and Steven J. Lentz , Woods Hole Oceanographic, Woods Hole, MA 02543
Program Manager: Dr. Lisa Dilling, NOAA Office of Global Programs

21 July 2003

Over the past year, the primary focus has been to collect the various sources of data associated with the tidal mixing front mooring array and process them for analysis. In addition, James Lerczak (recently hired assistant scientist) and Robert Beardsley attended the Georges Bank Phase 4 Physical Oceanography Workshop in October, 2002, at the Woods Hole Oceanographic Institution. This allowed Lerczak, who is new to the Georges Bank study, to interact with the researchers involved in various aspects of the study, learn some of the major objectives of the study, and become acquainted with the various data sets collected during the field experiments.

The principle data sets processed for the tidal mixing front study included the current, temperature, and salinity measurements from the tidal mixing front array and from the southern flank mooring; meteorological data from the southern flank mooring and an NDBC buoy, and hydrographic data in the vicinity of the mooring array from cruises during the 1999 Georges Bank study. Processing involved putting all time series data onto a common time grid, running quality-control filters on the data, and storing all data in a common file format (MATLAB). Particular attention was paid to the acoustic Doppler current profiler (ADCP) data, which had spikes which were believed to be noise and not associated with real physical processes. These spikes were removed through a combination of a tidal harmonic analysis and hi-pass filtering. Processing is now complete.

In our analyses of the data sets, we will focus on two goals: 1.) formulate a description of the tidal mixing front, and the evolution of the front (density structure and currents) through the development of increased stratification from spring through summer (the duration of the mooring deployment); 2.) quantify the sub-tidal, cross-channel circulation in the vicinity of the front and the buoyancy flux across the front. In addition, we will collaborate with C. Chen (UMass-Dartmouth) to make detailed comparisons of the structure of the tidal mixing front circulation, stratification and fluxes revealed by this data set with that produced by the finite-volume numerical modeling of Chen.

CICOR 2003 Marine Science Award Winner

Marley Bice, daughter of WHOI scientist Karen Bice was the recipient of the CICOR Marine Science Award at the Falmouth High School Science Fair in March. She went on to win First Place in the Massachusetts State Science Fair. Congratulations, Marley!

Do the Oxygen Isotopes of Foraminifera Record Temperature?

The objective of this project was to examine how well the temperatures inferred from the oxygen isotope ratios ($\delta^{18}O$) in the skeletons of different species of planktonic foraminifera record the temperature of the water in which the forams grew. Scientists studying future climate change use $\delta^{18}O$ in forams from sea floor sediments to understand past climate change. But the isotopic temperature record and month of bloom of different planktonic species is not well understood.

The data I did get show that the foram $\delta^{18}O$ records temperature and that *G. rubber pink* and *G. sacculifer* would be the best to use in reconstructing past sea surface temperatures.

For complete summary, visit our web site at www.whoi.edu/science/cicor/communications/cicor_award.html

CICOR Grad Student

Supported by CICOR, Rob Jennings is a Ph.D. pre-candidate in the MIT/WHOI Joint Program in Biological Oceanography. He is in the Biology Department, working with Lauren Mullineaux as his advisor.

Annual Summary

I have spent most of the past year investigating population genetic variation of the marine polychaete worm *Clymenella torquata* (a bamboo worm of the family Maldanidae). During the summer of 2002, I collected ~30 worms from each of several sites around Cape Cod (Buzzards Bay, Hyannisport, Stage Harbor, Pleasant Bay, and Barnstable Harbor), as well as from Pembroke, ME and Belmar, NJ. during interglacial periods. In addition to the adult collections described above, I collected juvenile (<3cm) worms from Barnstable Harbor for the second objective of my dissertation. My third objective has been to develop a theoretical framework for the issues and complexities introduced by the second objective. No current population genetic models incorporate two-stage (i.e., juvenile and adult) dynamics, nor do they consider the possible effects of severe post-settlement mortality. The third objective thus seeks to interpret any differences seen between the *gene flow* estimate of the first objective (based on adults) and the *dispersal* estimate of the second objective (based on juveniles). In the fall semester of 2002, I was the TA for WHOI's new Invertebrate Biology class. In November 2002, my previous advisor Ken Halanych left WHOI for a position at Auburn University, AL. I was extremely lucky in that the transition happened very smoothly; since I had already felt that I was in effect co-advised by Lauren Mullineaux for some time. In February 2003, I wrote a proposal to CICOR asking for research funds to cover my dissertation in Ken's absence. With Lauren Mullineaux's and Nanc Brink's help, the proposal went through smoothly and CICOR has graciously agreed to provide funding for my dissertation in conjunction with WHOI's Academic Programs Office.

CICOR Post-Docs

CICOR's 4th Post-Doctoral Scholar is **Amy Baco -Taylor** who arrived at WHOI in June of 2002. She is focusing on one research project, examining the population genetics and dispersal of deep-sea precious corals from the Hawaiian Archipelago. These corals are the focus of a profitable fishery, yet little is known about their dispersal capabilities or general ecology. She is using microsatellite methods to address these issues. Mostly she has spent time learning new microsatellite methods and developing usable microsatellite markers for her study.

She submitted several proposals related to the ecology and evolution of seamount fauna. Two of these proposals have been funded, both through NOAA's Office of Ocean Exploration

A third proposal is currently pending with NOAA NURP Alaska. She participated in an Ocean Exploration cruise to the Gulf of Alaska Seamounts where she collected deep-sea corals and other seamount invertebrates

Submitted Publications:

Baco, A.R. and C.R. Smith. High species richness in deep-sea chemoautotrophic whale skeleton communities. In Review. *Marine Ecology Progress Series.*

Smith, C.R. and A.R. Baco. Ecology of whale fall on the deep-sea floor. Invited Submission to *Oceanography and Marine Biology Annual Review.* In Press.

Ruoying He will be CICOR's 5th Post-Doctoral Scholar. He received his PhD from the University of South Florida in May 2002. He will be working with Bob Beardsley, a senior scientist in the Physical Oceanography Department and Dennis McGillicuddy, an associate scientist in the Applied Ocean Physics & Engineering Department. His research interests include Shelf and Estuarine Circulation, physical/biogeochemical interactions, air/sea interactions and inverse methods of oceanography.

CICOR Post-Docs and Joint Program Students

Post-Doc	CICOR Theme	Appt. Dates
Ryuoing He	Coastal/Climate	2003-2005
Amy Baco-Taylor	Marine Ecosystem Processes	2002-2003
Livui Giosan	Climate/Coastal	2001-2003
Jim Lerczak	Coastal/Near-Surface Processes	2000-2002
Fiamma Straneo	Climate/Climate Variability	1999-2002
Graduate Student	**CICOR Theme**	**Appt. Dates**
Rob Jennings	Marine Ecosystems	2000-
Steve Fries	Coastal/Near-Surface Processes	2000-2001

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to gather information from all JIs to develop a list of administrators and personnel within the JIs that are willing to contribute their expertise to the matrix management planning process. This will be distributed to the SRC members and to the NOAA strategic goal team leaders and Program Managers.

Both a new head of NOAA OAR and a new Climate Team leader are expected to be in place soon. Once this happens, Bob will return to Silver Spring to meet with them.

Marilyn Moll continued from page 1

bike trip each year, from Santa Barbara to La Jolla? And we were especially surprised to learn that Marilyn is not a 'Water'' person. Given the choice you'll find her BY the pool or ON the beach, (since "Jaws" could still be around.) Even with that, Cape Cod is one of her favorite places.

Dr. John Cortinas took over as interim OAR Joint Institutes Program Manager in May 2003.

CICOR Executive Board Members	
Louisa Koch	OAR Deputy Assistant Administrator, NOAA
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Dr. Kristina Katsaros	Director, Atlantic Oceanographic and Meteorological Laboratory
Dr. Steven Brandt	Director, Great Lakes Environmental Research Laboratory
Dr. Michael Hall	Director NOAA OGP, Office of Global Programs
Dr. Ants Leetmaa	NCEP, National Weather Service
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CICOR Directory

Woods Hole Oceanographic Institution

Robert A Weller, Director ..... rweller@whoi.edu

James Luyten, Executive Board Chairman ..... jluyten@whoi.edu

Claire Reid, Executive Administrator .. creid@whoi.edu

Maurice Tavares, Financial Administrator ..... mtavares@whoi.edu

Nancy Brink, Assistant Administrator . nbrink@whoi.edu

Woods Hole Oceanographic Institution • MS #29 • 360 Woods Hole Road • Woods Hole, MA 02543

508/289-2779 • 508/457-2163 (fax) • email cicor@whoi.edu

Nancy Brink, Editor • Katherine Joyce, Designer

CICOR Office

Woods Hole Oceanographic Institution

Mail Stop #29

360 Woods Hole Road

Woods Hole, MA 02543